

**REMARKS**

Applicants respectfully request reconsideration of the rejection of the claims in view of the remarks set forth below. Claims 1-20 remain in the application. Claims 1, 9, and 16 have been amended. Claims 2-8, 10-15, and 17-20 remain unchanged.

**35 U.S.C. §112**

Claims 1-20 stand rejected under 35 U.S.C. §112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the examiner notes in regard to independent claims 1, 9, and 16, one skilled in the art is unable to determine the value of a "large" frequency offset. In response to the examiner's remarks, the applicants have amended the claims in order to overcome the rejection.

Claims 1-20 stand rejected under 35 U.S.C. §112 second paragraph as being incomplete for omitting essential cooperative relationships of elements or steps, such omission amounting to a gap between the necessary structural connections or steps. In particular, the examiner notes in regard to independent claims 1, 9, and 16, the limitation including "in the presence of a large frequency offset" plays no relation to any of the structure of the claimed apparatus or steps of the claimed method. In response to the examiner's remarks, the applicants have amended the claims in order to overcome the rejection.

**35 U.S.C. §103**

Claims 1-3, 6, 16, 17, 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sourour et al (US 6421371; hereafter "Sourour"). Applicants respectfully traverse this rejection.

Amended claim 1 recites, inter alia, "An apparatus for performing a pilot synchronization . . . comprising . . . a plurality of sliding correlators that each receives a portion of a received correlation sequence and provides a partial correlation output . . . a plurality of absolute value blocks that take *only* a respective absolute value of each partial correlation output . . . and circuitry that

combines the absolute values of each of the absolute value outputs to form a correlation output . . . wherein a linear relation *between each* of the absolute values for each partial correlation output is used to perform pilot synchronization." (emphasis added). Support for the amendment to claim 1 is found on page 5 lines 32-33 and page 6 lines 5-7. The applicants respectfully propose that Sourour fails to teach or suggest all of the elements of amended claim 1.

Sourour appears to teach an apparatus for performing a synchronization in a wireless communication system. The apparatus uses a series of sliding correlators on a partial correlation sequence. The apparatus further combines the magnitude squared values of the outputs of the correlators to determine whether the signal is properly synchronized. In contrast, claim 1 recites "a plurality of absolute value blocks that take *only* a respective absolute value of each partial correlation output . . . and circuitry that combines the absolute values of each of the absolute value outputs to form a correlation output . . . wherein a linear relation *between each* of the absolute values of each partial correlation output is used to perform pilot synchronization." As stated, Sourour appears to focus on making a decision regarding synchronization, given the presence of an offset in the synchronization signal, using magnitude squared values from the correlators. Further, Sourour appears to rely on taking the magnitude squared value in order to generate a non-linear relation between each of the values of the partial correlation outputs. Sourour does not appear to teach or suggest "a plurality of absolute value blocks that take *only* a respective absolute value of each partial correlation output . . . wherein a linear relation *between each* of the absolute values for each partial correlation output is used to perform pilot synchronization." There is a distinct difference between using only the absolute value and using the magnitude squared value. The absolute values of each of the correlators in the present invention maintain a linear relationship between each value. Unlike the present invention, where only the absolute value of the partial correlation outputs is used, the nonlinear relation resulting from the use of the magnitude squared values in Sourour results in a nonlinear relation between each value. A nonlinear relation may be undesirable in some operations because the nonlinear relation creates deference to certain values at the outputs of the correlators over other values. For instance, the nonlinear relation may provide undesirable exaggeration of the errors

found in the presence of higher frequency offsets. Therefore, the use of magnitude squared values taught in Sourour does not recognize the desirable benefit of a linear relation between each of partial correlation outputs created by using only the absolute value of the partial correlation outputs.

The examiner has also indicated that the linear relation in claim 1 of the present application is embodied by Sourour as the "circuitry that combines", or the adding circuitry. The applicants respectfully disagree and propose that the adding circuitry creates a linear "combination" of the magnitude squared values but does not embody a linear relation between each of the respective partial correlation outputs. Claim 1 as amended, states, "a linear relation *between* each of the absolute values for each partial correlation output is used to perform pilot synchronization." The adding circuitry, shown in Sourour as subsequent to the respective partial correlation outputs, does not create a linear relation between each of the values of the outputs. The adding circuitry can only create a linear combination of the values of the partial correlation outputs by the linear addition of the outputs.

As a result, Sourour fails to teach or suggest all of the elements of claim 1. Therefore, it is respectfully proposed that the rejection for obviousness under 35 U.S.C. § 103(a) is overcome and notice to that effect is earnestly solicited.

Dependent claims 2-8 being dependent on and further limiting independent claim 1, should be allowable for that reason, as well as for the additional recitations that they contain. Therefore, it is respectfully proposed that the rejection of claims 2-8 under 35 U.S.C. § 103(a) is overcome in accordance with the above remarks and notice to that effect is earnestly solicited.

Amended independent claim 16 includes elements similar to the elements of independent claim 1 and should therefore be allowable for the same reasons discussed above as well as for the additional recitations contained therein. Therefore, it is respectfully proposed that the rejection of claim 16 under 35 U.S.C. § 103(a) is overcome in accordance with the above remarks and notice to that effect is earnestly solicited.

Dependent claims 17- 20, being dependent on and further limiting independent claim 16, should be allowable for that reason, as well as for the additional recitations that they contain. Therefore, it is respectfully proposed that

the rejection of claims 17 - 20 under 35 U.S.C. § 103(a) is overcome in accordance with the above remarks and notice to that effect is earnestly solicited.

Claims 9-11, 14, and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Schelm et al (US Pub No. 2003/0235238; hereafter "Schelm") in view of Sourour. Applicants respectfully traverse this rejection.

Amended claim 9 recites, inter alia, "A code division multiple access ("CDMA") receiver, comprising . . . an analog-to-digital converter . . . a matched filter . . . a tapped delay line . . . and a cell search block, comprising . . . a plurality of sliding correlators that each receives at least a portion of the delayed filtered digital signal and provides a partial correlation output . . . an absolute value block that takes only the absolute value of each partial correlation output . . . and circuitry that combines the absolute values of each of the absolute value block to form a correlation output . . . wherein a linear relation of the absolute values between each partial correlation output is used to determine synchronization channel timing." The applicants respectfully propose that Schelm, Sourour, or the combination of the two do not teach or suggest all of the elements of amended claim 9.

As noted earlier for claim 1, Sourour appears to fail to teach or suggest "an absolute value block that takes *only* the absolute value of each partial correlation output . . . wherein a linear relation of the absolute values *between each* partial correlation output is used to determine synchronization channel timing." Schelm appears unable to remedy this deficiency in Sourour. In particular, Schelm appears to teach a receiver comprising an analog to digital converter, a matched filter, a tapped delay line, and a cell search block. However, Schelm does not appear to teach "an absolute value block that takes *only* the absolute value of each partial correlation output . . . wherein a linear relation of the absolute values *between each* partial correlation output is used to determine synchronization channel timing." As a result, Schelm fails to remedy the deficiency of Sourour. Accordingly the combination of Schelm and Sourour does not teach or suggest all of the elements of claim 9. Therefore, it is respectfully proposed that the rejection under 35 U.S.C. § 103(a) is overcome in accordance with the above remarks and notice to that effect is earnestly solicited.

Dependent claims 10-15, being dependent on and further limiting independent claim 9, should be allowable for that reason, as well as for the additional recitations that they contain. Therefore, it is respectfully proposed that the rejection of claims 10-15 under 35 U.S.C. § 103(a) is overcome in accordance with the above remarks and notice to that effect is earnestly solicited.

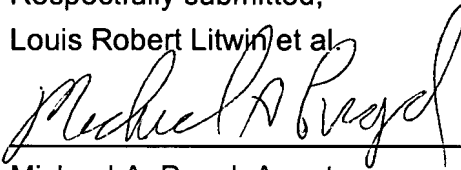
### **Conclusion**

Having fully addressed the Examiner's rejections it is believed that, in view of the preceding remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicants' agent at (317) 587-4027, so that a mutually convenient date and time for a telephonic interview may be scheduled.

No fee is believed due in regard to the present amendment. However, if a fee is due, please charge the fee to Deposit Account 07-0832.

Respectfully submitted,

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